

A REHABILITATION STORY :
LOWMAN HALL



Watson Tate Savory **Liollo**
ARCHITECTURE

A Rehabilitation Story

Lowman Hall - South Carolina State University – Orangeburg, South Carolina

Presenters:

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Learning objectives:

- Building History & Institution History; Impacts on rehabilitation process
- Possible impacts of delayed maintenance for buildings prior to renovation
- Repair and rehabilitation techniques - interior and exterior building elements
- Lessons learned



Building History



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Miller F. Whittaker

- South Carolina's first registered African-American Architect
- Professor on campus
- Became 3rd college president; 1932-1949
- Designed Lowman Hall and supervised students who constructed the building





1917 Construction Photo (built by students from the college)

Men's Dormitory for 75 years

Location



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Men's Dormitory – before 1924





Men's Dormitory – 1950s



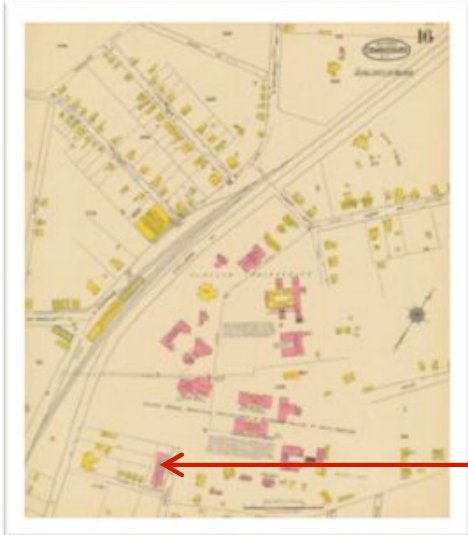


Men's Dormitory – 1960s





1985



Location



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1985



Main Campus Entrance

Location



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1985 – Lowman Hall placed on the National Register of Historic Places





1992 Campus Master plan : **Demolition Recommended**



?





1993 **Building Closed**



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Modifications over Time



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- 1920s
- Portico Railings
 - East Balcony
 - Roof
 - Stairs
 - Ramp



- 1960s
- Toilet Rooms

1990s



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1920s • Portico Railings

• East Balcony

• Roof

• Stairs

• Ramp

1960s

• Toilet Rooms

• Sprinklers

• Electrical

• Steam Heat

1990s

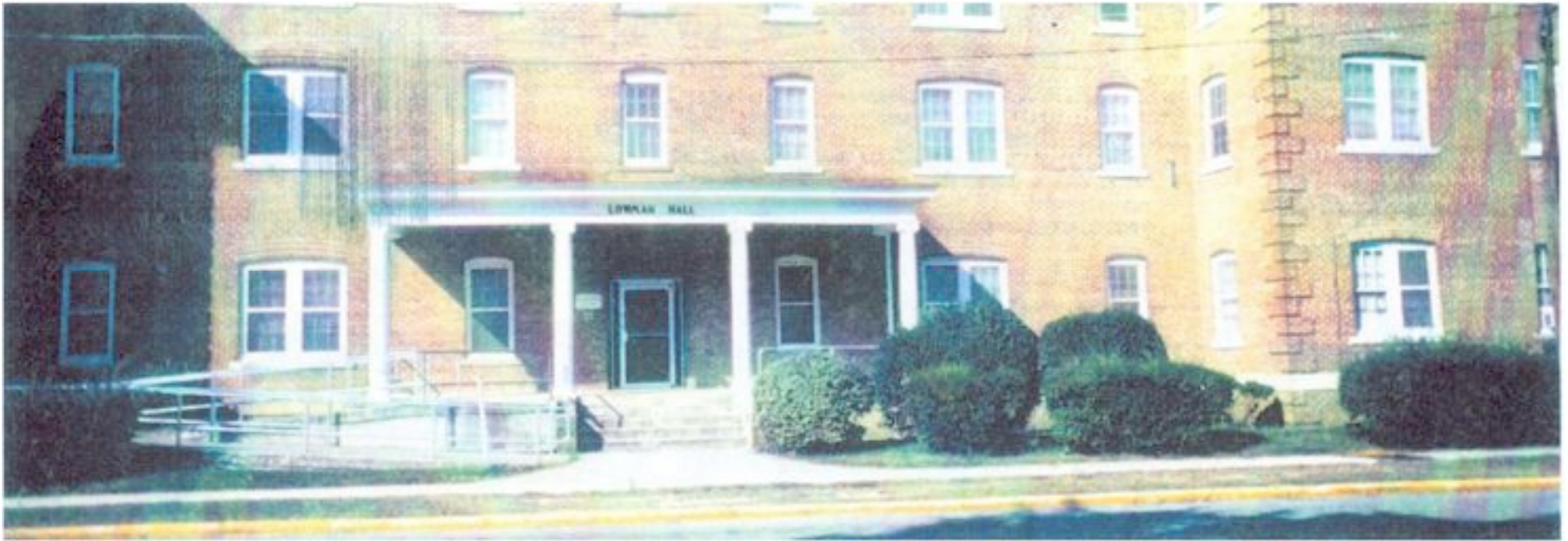
• Exterior Drs.



Impacts of Time



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1993 **Building Closed**

Next renovation would not begin until 2008



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What can happen in 15 years?





A LOT



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Weathering & Settling





Damage During Closure – Roof Leaks





Damage During Closure – Steam Leaks



History & Alumni; Effects on the Rehabilitation



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Alumni Surveys - Conducted on two occasions by SC State University Staff to gather information on the building

Alumni Comments to University Administration – “First question: ‘When is Lowman Hall going to get fixed up?’ “

Design Schemes – from 2001 – 2008

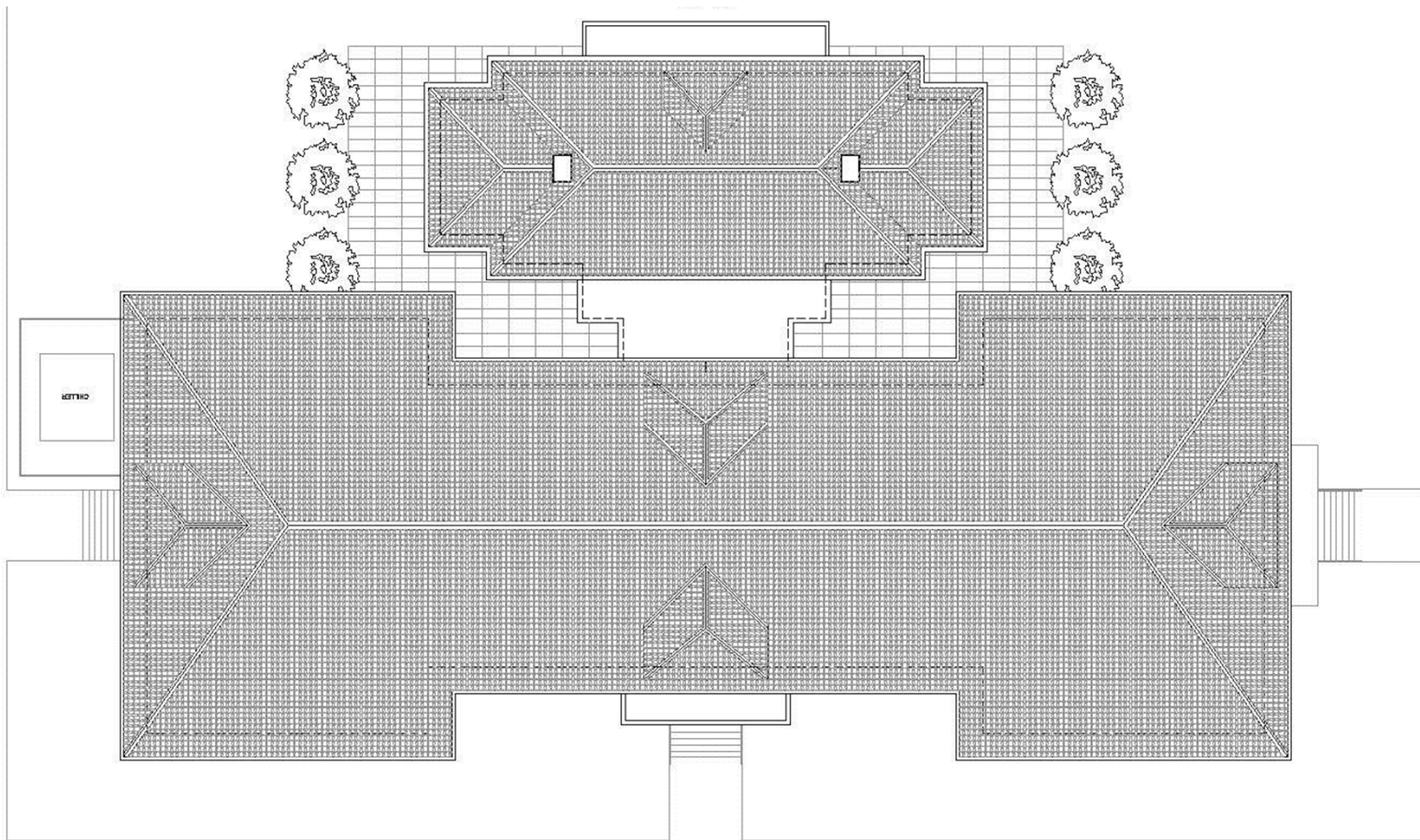
2003 Scheme

2005 Scheme

NPS Funds & President's Plan

2008 Scheme (Final)



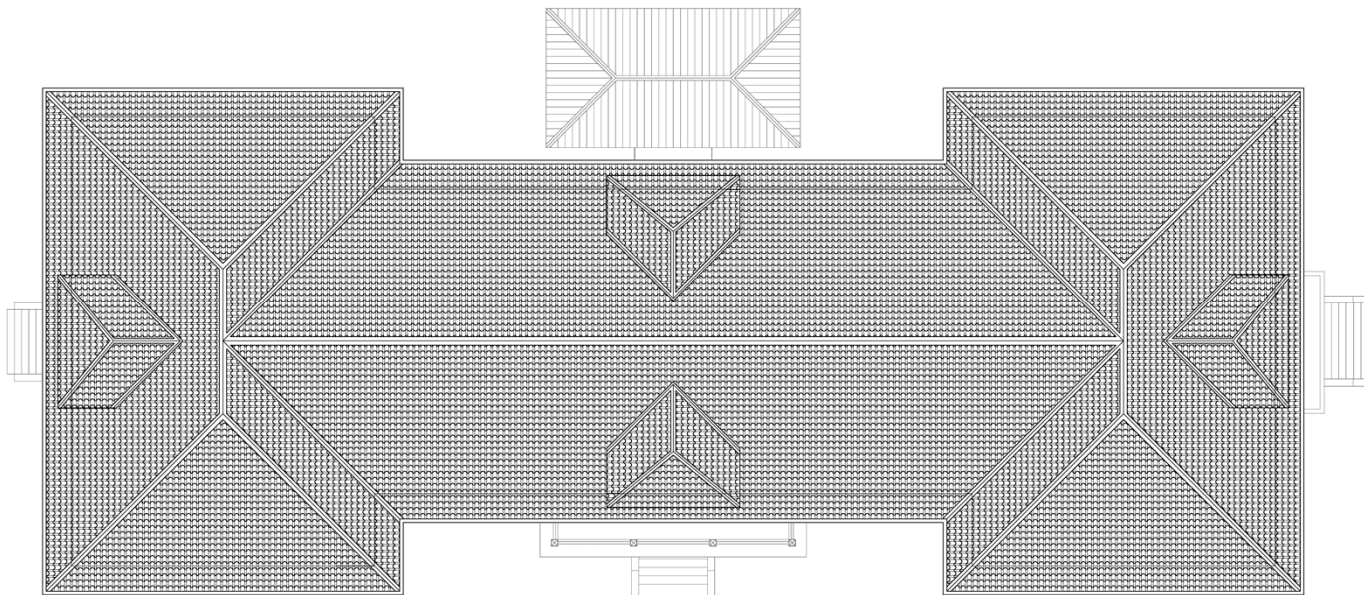


2003 Scheme

'03



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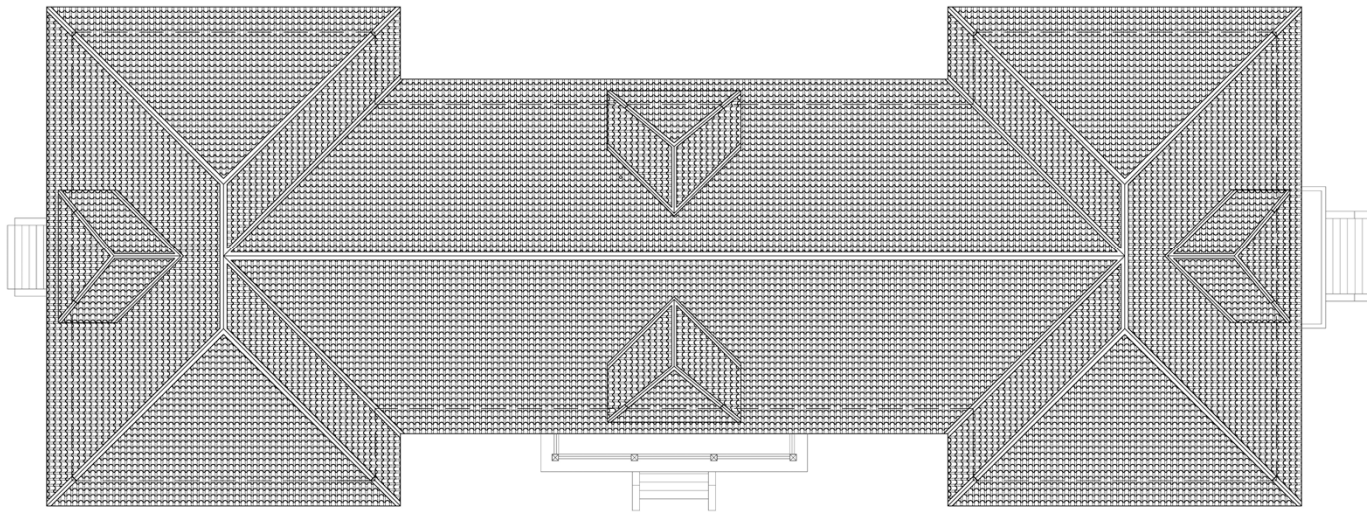
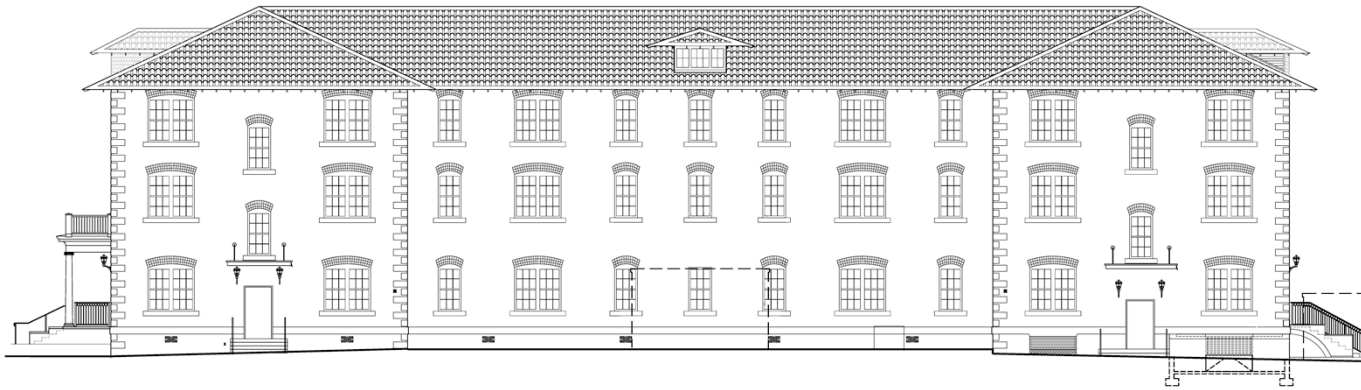


'05

2005 Scheme



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'08

2008 Scheme (Final)



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Major Impacts to Rehabilitation Due to National Park Service Funds;

- Change from “Renovation” to “Rehabilitation”
- Added motivation to the university to start work
- Original windows rehabilitated, not replaced
- Wall finishes in offices
- Floor finishes in offices
- Added review



National Park Service Funds

'08



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TIM DOMINICK/TDOMINICK@THESTATE.COM

George Cooper, president of S.C. State University, this summer walks past renovations on Lowman Hall, one of the oldest buildings on campus.

REBIRTH OF A LANDMARK

S.C. State dorm, built in 1917 and once the pride of the school, gets new life

By WAYNE WASHINGTON
wwashington@thestate.com

ORANGEBURG

This is the story of a building, S.C. State University's Lowman Hall, brought to life by black hands, killed, in part, by white indifference, and now being painstakingly, lovingly restored by

a multiracial coalition of craftsmen, engineers and architects.

This is the story of a university trying to bring back the striving pride and promise of another era.

"Everybody's just as excited as can be," said S.C. State president George Cooper, whose office is

SEE LOWMAN PAGE A12

'08

President's Plan

The State Newspaper (Nov. 30, 2008)



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'10

President's Plan



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Techniques; Interior Elements



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Ask This Old House



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Ask
This Old
House

Guess what caused this wall to fail this way.



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Plaster, Plaster, Plaster

Substrates

1. Solid Brick Walls at Exteriors
2. Clay Tile Walls at Stair
3. Wood Stud Framing at Walls
4. Wood Stud Framing at Ceilings

Stabilizing Existing Plaster On Rotten Wood Framing

Dying Art Form





Plaster - Substrates



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Plaster – Unsound Framing





Plaster – Unsound Framing Stabilization





Plaster – Dying Art Form



Wainscot

- **Paint History**
- **Incompatible Past Repairs**





Guess paint history of trim.



Ask
This Old
House



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Talladega College, AL

Wainscot – Paint History



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Wainscot – Final...and before



Ceilings

- **Discovered Unsoundness**
- **Ceiling Edge Treatment**
- **Coordination With New Systems**





Ceilings – Discovered Unsoundness





Ceilings – Edge Treatment





Ceilings – Edge Treatment – Second Floor Transoms





Ceilings – Edge Treatment – Typical Office



Floors

- **Wisdom of Pre-Construction Owner Demolition**



Doors and Transoms

- Repair and Replace In-Kind



Lighting

- Appropriate to the Period & Respect Campus Standard



Techniques; Exterior Elements

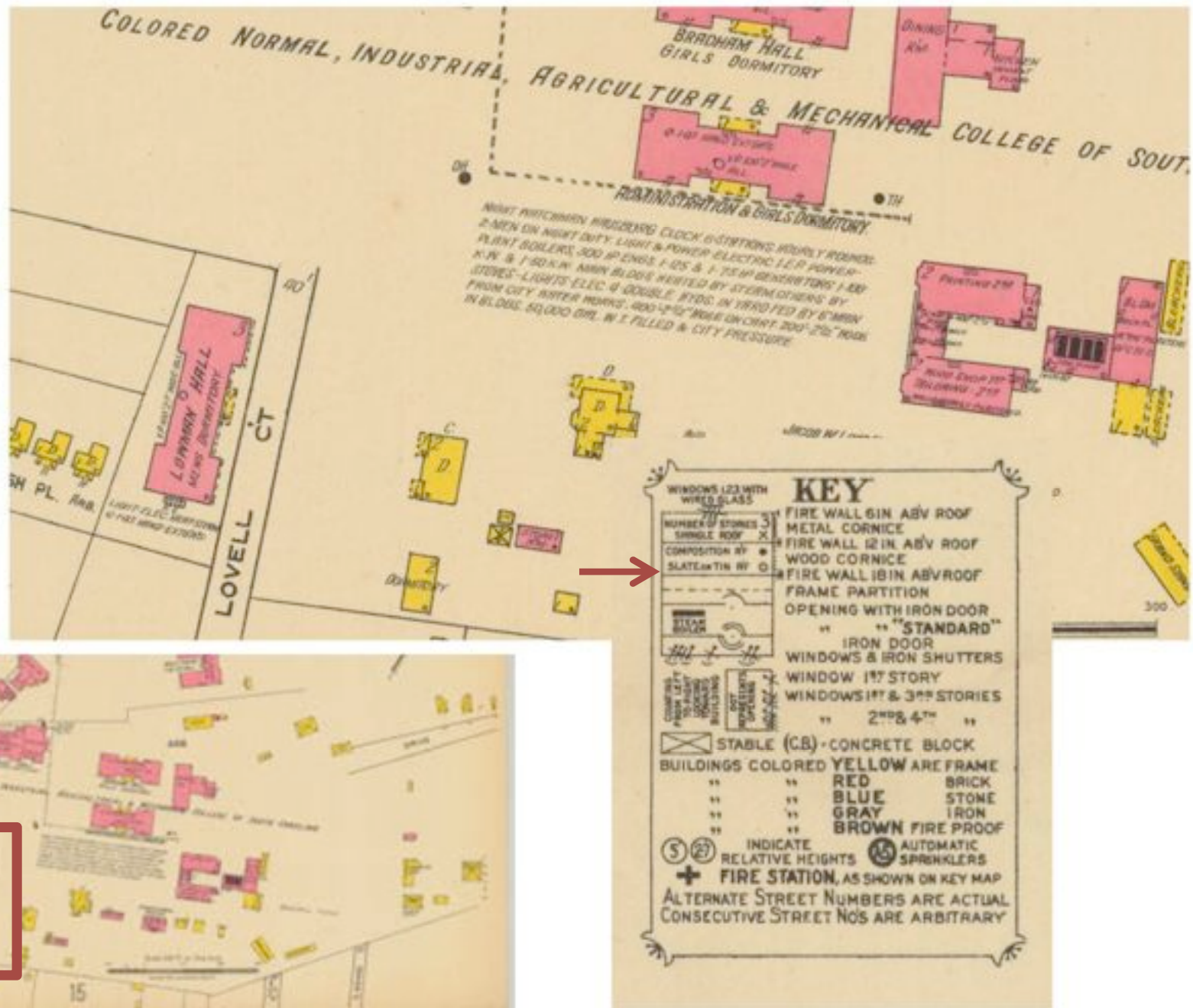


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Roof

- **Historical Research**
- **Slate vs. Metal**
- **Trim and Cedar Siding**





Roof – Historical Research – Sanborn Maps



Metal was chosen over slate for the following reasons;

- 1. Search of attic revealed no evidence of original slate roofing**
- 2. Structural engineer felt original framing wouldn't support slate roofing**
- 3. Profiled metal roof tiles were available at the time of original construction**
- 4. Metal would've been more in line with institution's financing at the time**
- 5. Historic photos were non-conclusive**





Unit Prices and Venting Detail



Roof – Trim and Cedar Siding



Ramp



Ramp – Light Touch and Reversible



Windows



Windows – Restored with Interior Storms





Windows – Restored with Interior Storms



Plaster Column Capitals

- Research - Before and After
- Molds
- Preserve Record





Plaster Column Capitals – Removal





**Plaster Column Capitals – Parts Used to Make Mold
& Preserve Record**



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Before (capital in best condition)



After (eight new capitals)

Plaster Column Capitals – Comparison



Wood Columns

- Existing Conditions
- Repairs
- Bases and Vents





Wood Columns – Existing Conditions





Ask
This Old
House

Guess what a “stave” is...and it’s use.



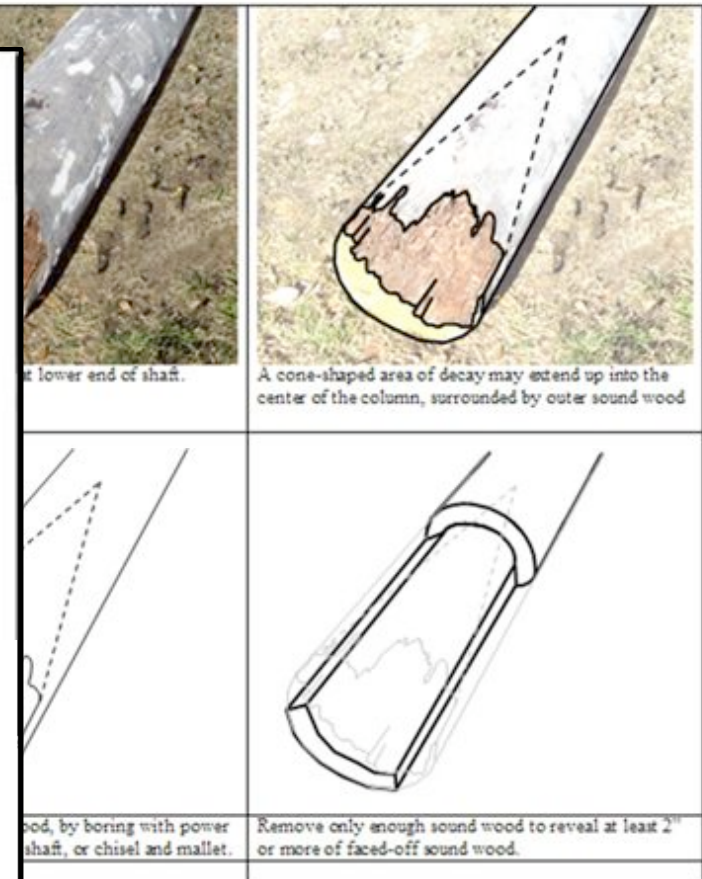
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John Leeke, historic building specialist, and column expert.

Webber Lowman Report

Method to repair rotten end of column shaft. This is a draft for discussion.
-- John Leeke, 207 773-2306



PRACTICAL RESTORATION REPORT - Exterior Wood Columns

This report covers repairs, restoration, installation and maintenance for columns up to ten feet tall. Architectural columns are made up of several elements which work together to provide massive visual and structural support for the entablature and roof framework. The main shaft is often supported by a round base and square plinth. The capital above terminates the column visually and serves to spread and even out the structural load taken from the span above. (Fig. 1)

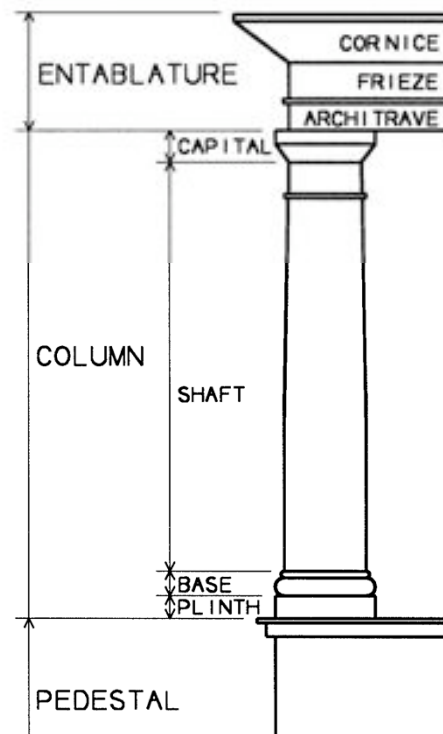


Fig. 1. Parts of a column.

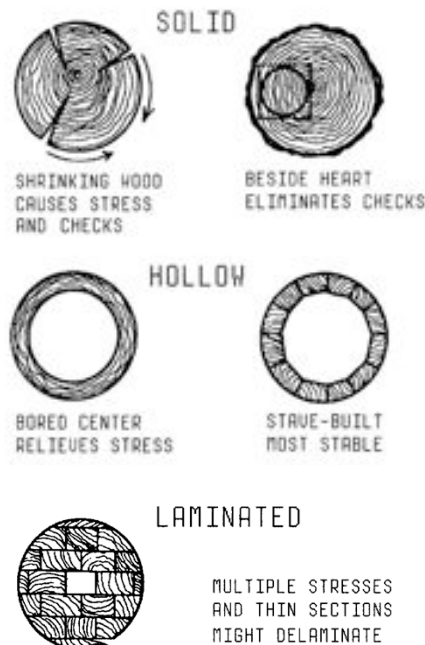


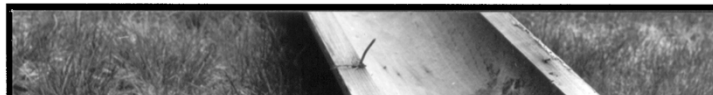
Fig. 2. Types of column shaft construction.

around the perimeter as it dries. This is the same type of check commonly seen in large timbers cut from a whole log.

Solid blanks were sometimes cut "beside the heart" of a log. As it dries, the wood shrinks across the diameter of the shaft and is less likely to check. Shafts up to six or eight inches in diameter were made this way, and smaller diameter porch posts still are.

With a hollow-bored shaft the center of the blank has been bored out, allowing the wood to shrink without the stress that causes major checks. (Fig. 3)

Types of Columns



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- Discussions with the architect: project philosophy?
- Reviewed project specifications: needed outcome?
- Interviewed contractor & tradespeople: skills & abilities?

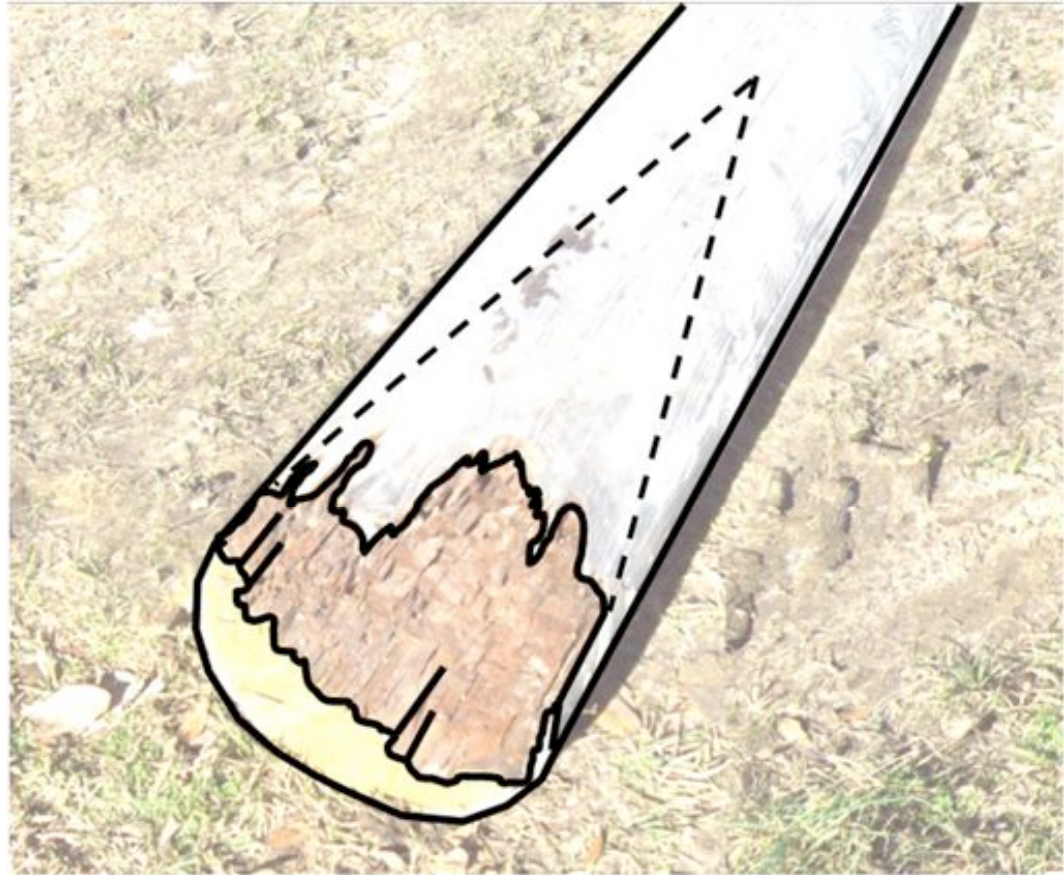


Existing Condition: decay at lower end of shaft.

- Developed a custom step-by-step method to save the columns



- Discussions with the architect: project philosophy?
- Reviewed project specifications: needed outcome?
- Interviewed contractor & tradespeople: skills & abilities?

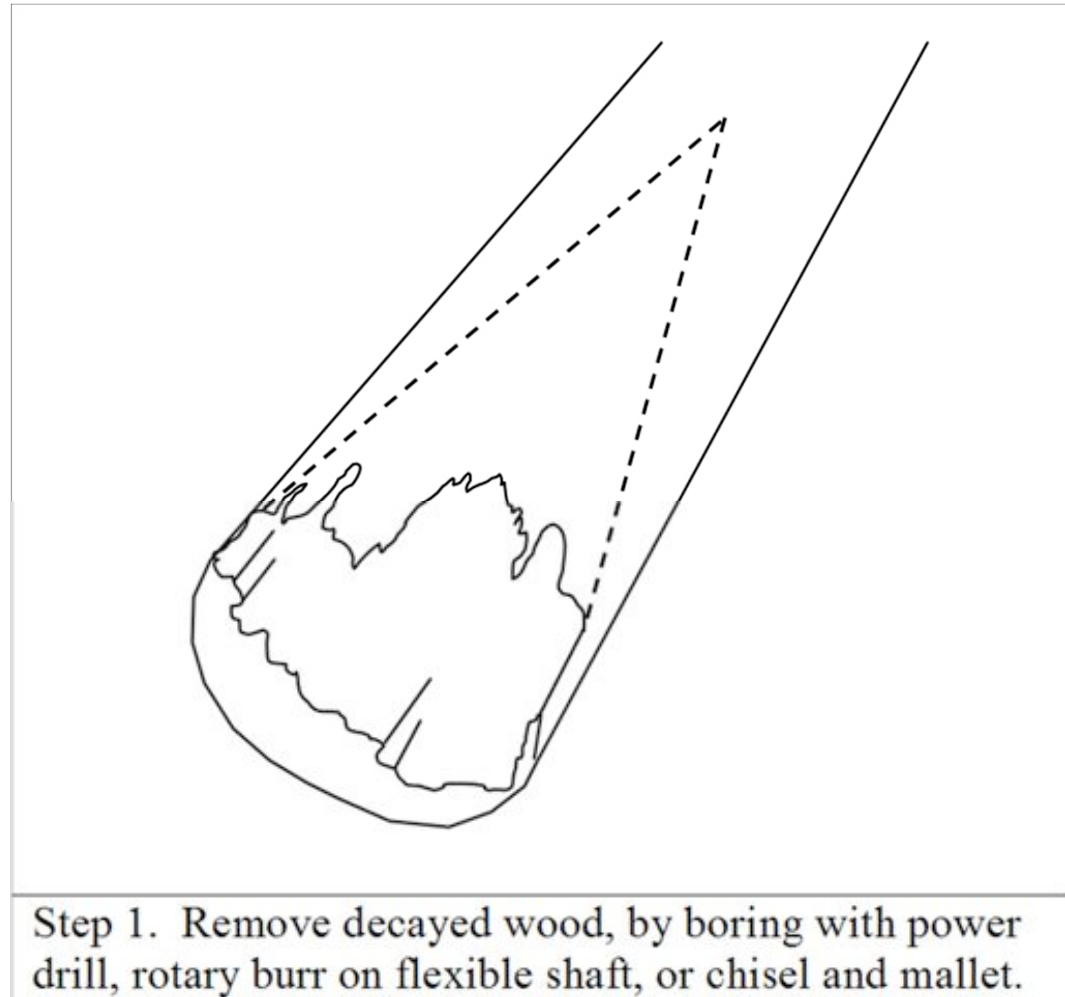


A cone-shaped area of decay may extend up into the center of the column, surrounded by outer sound wood

Using graphics that show hidden views



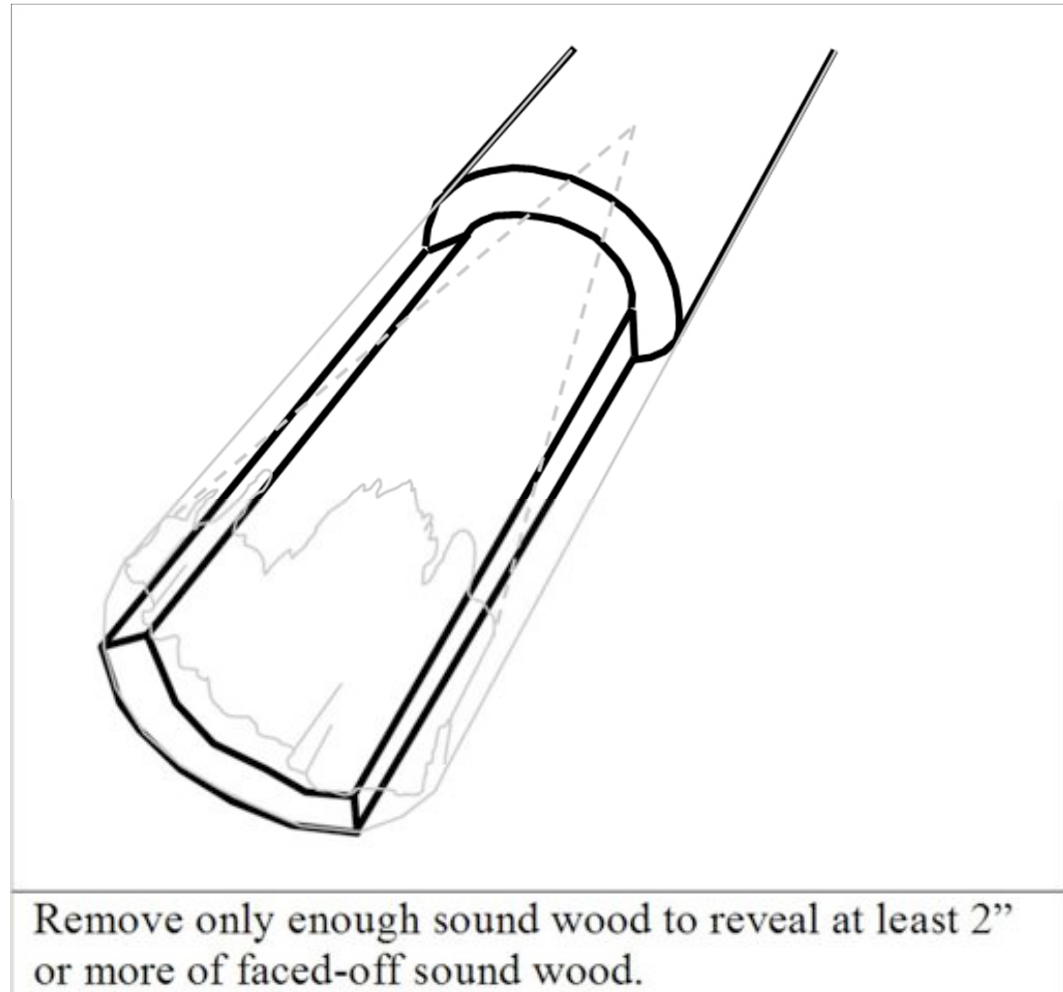
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With further detailed instructions



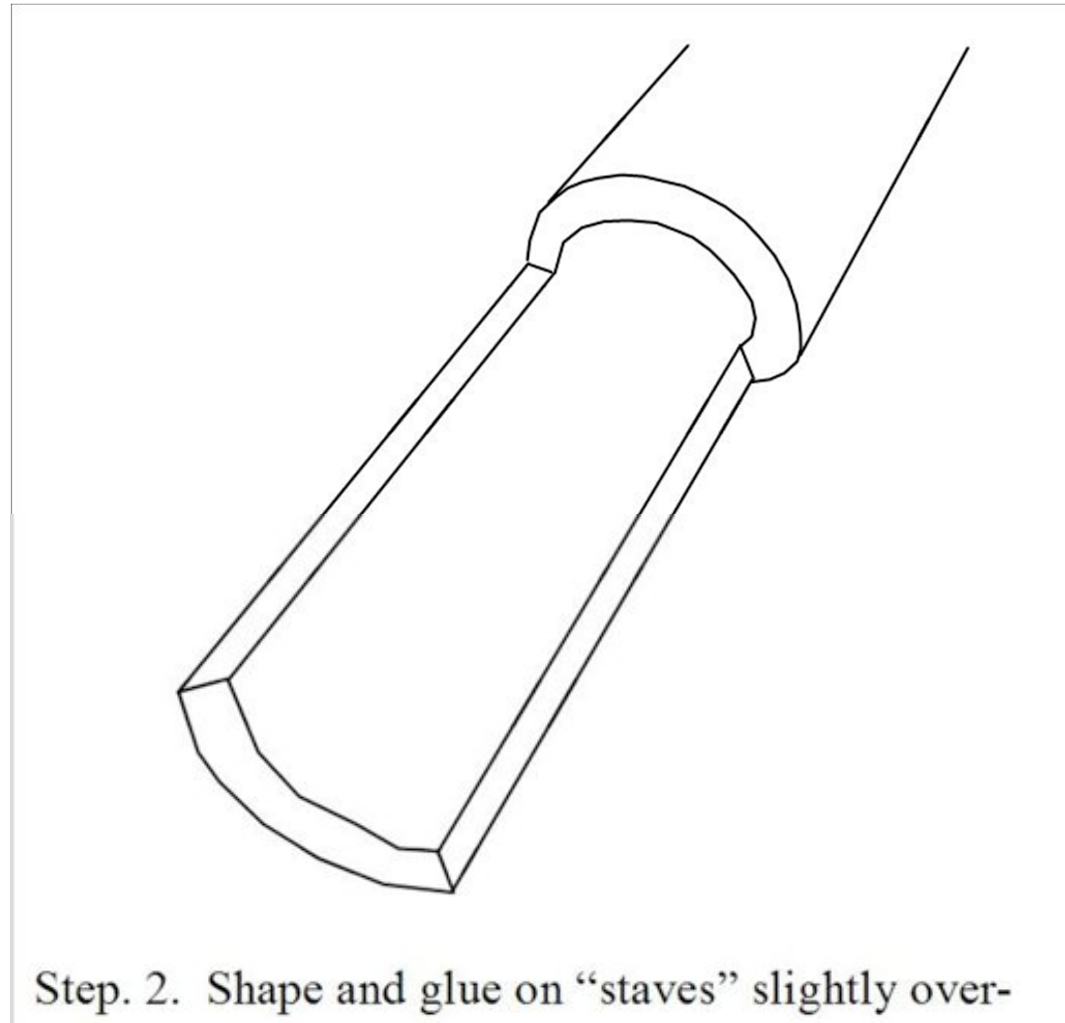
- Discussions with the architect: project philosophy?
- Reviewed project specifications: needed outcome?
- Interviewed contractor & tradespeople: skills & abilities?



And cautions to avoid problems

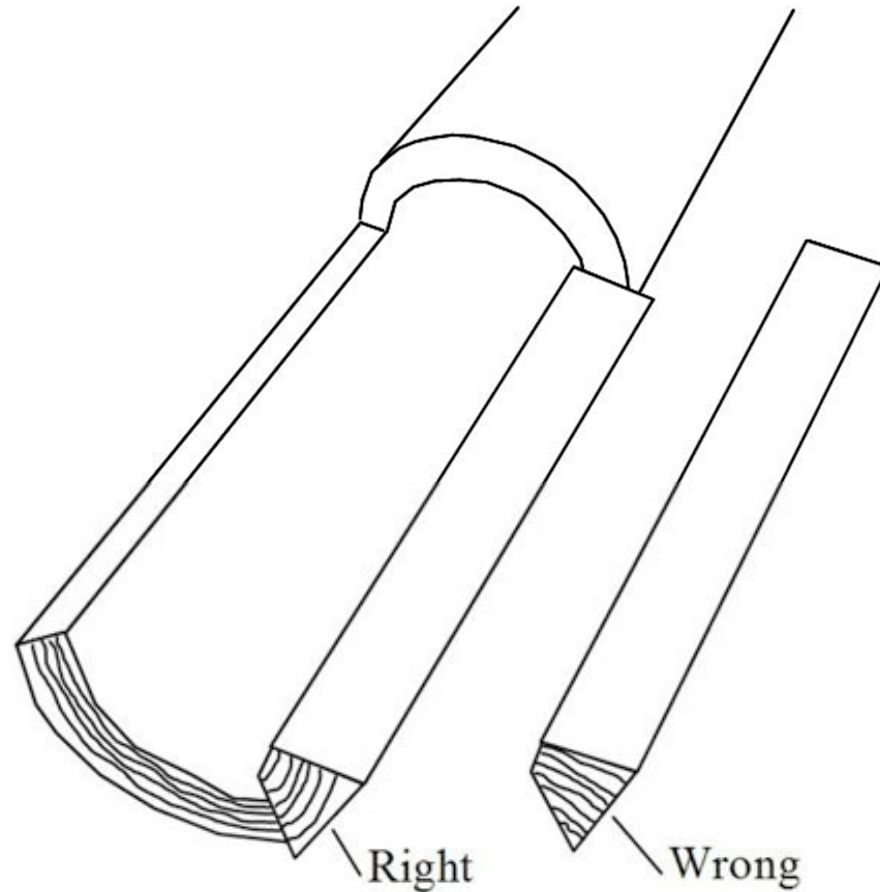


- Discussions with the architect: project philosophy?
- Reviewed project specifications: needed outcome?
- Interviewed contractor & tradespeople: skills & abilities?



- Tips & techniques to improve quality

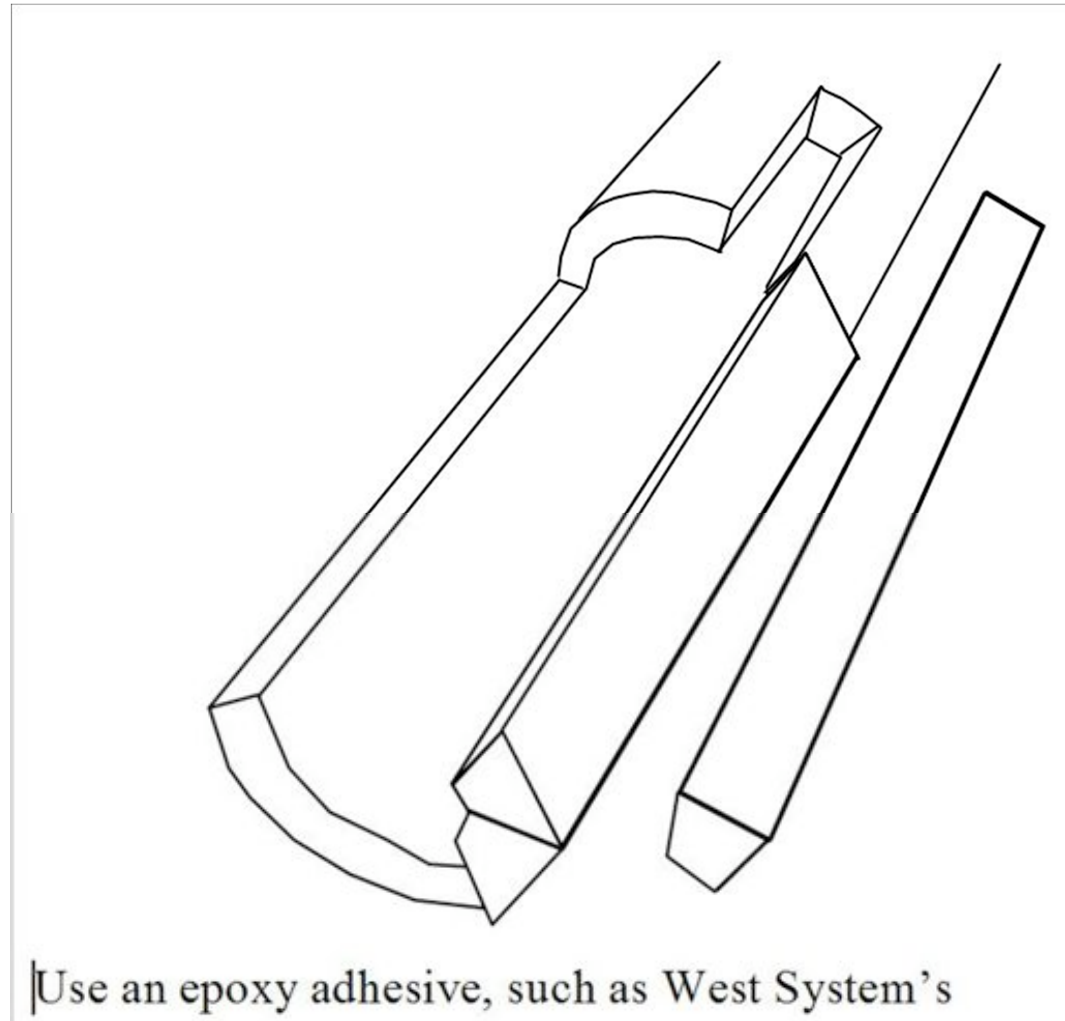
- Discussions with the architect: project philosophy?
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Select stock for the staves that is the same species,

- Famous “right & wrong” illustrations

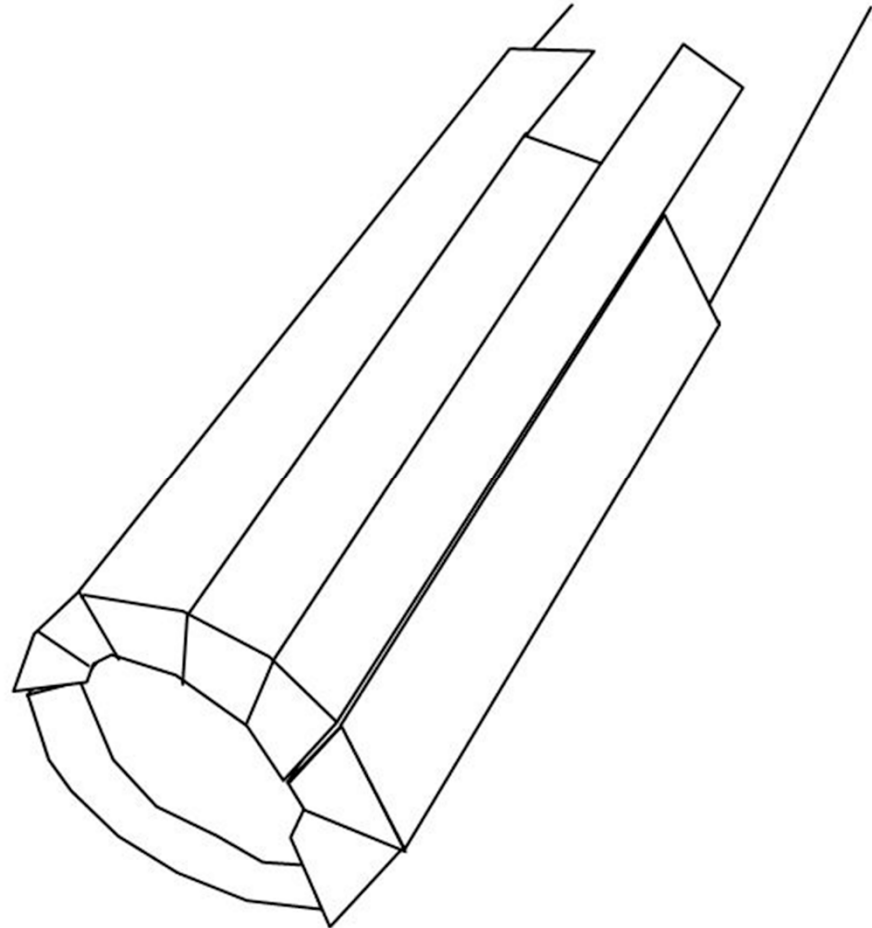
- Discussions with the architect: project philosophy?
- Reviewed project specifications: needed outcome?
- Interviewed contractor & tradespeople: skills & abilities?



- With specific materials and products known to work best



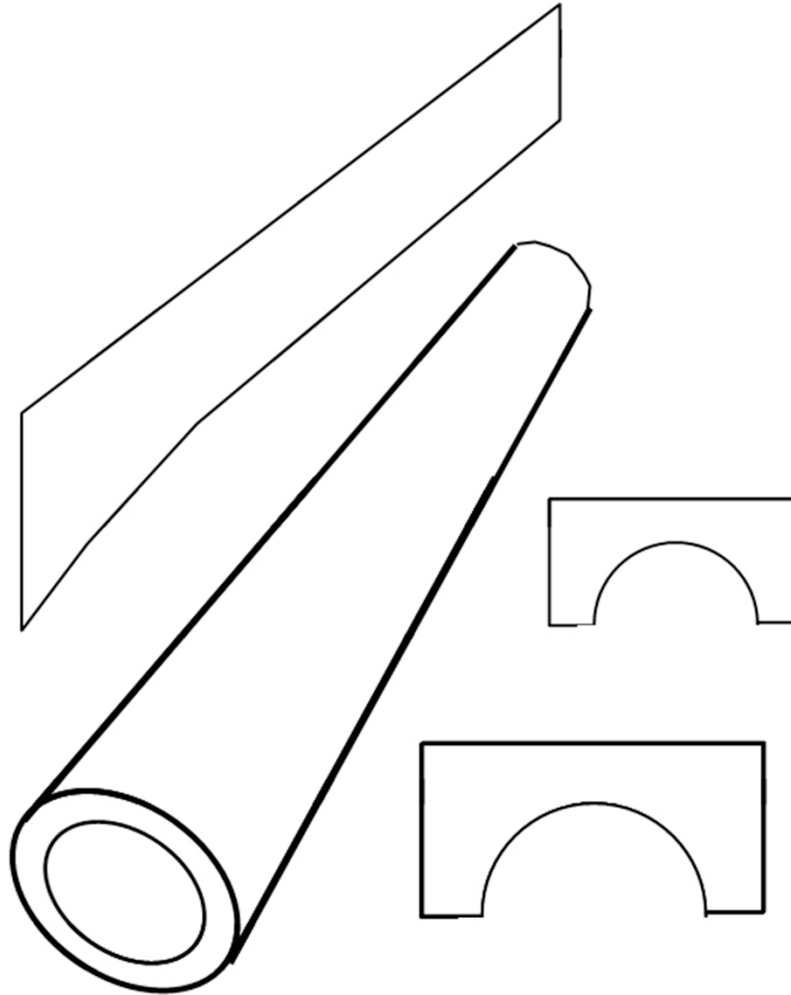
- Discussions with the architect: project philosophy?
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- Interviewed contractor & tradespeople: skills & abilities?



Correct appearance at the end of each step



- Discussions with the architect: project philosophy?
- Reviewed project specifications: needed outcome?
- Interviewed contractor & tradespeople: skills & abilities?



Tradespeople could easily understand and implement the method.





David Prior
at work

Wood Columns – Chisels and Staves



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Wood Columns – Repairs



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Wood Columns – Bases





Wood Columns – Bases Installed



Lessons Learned



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Lessons Learned

- **Importance of destructive investigation prior to the beginning of large scale construction**
- **Importance of mock-ups to ensure architect, owner, and contractor are all in agreement and know what the final appearance will be**
- **Importance of observing details as they are uncovered and having a means to adjust to changes**



Award Winning



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Awards

- **AIA South Carolina Chapter – Citation Award**
- **AIA Columbia Section – Merit Award**

Publications

- **The State Newspaper – November 30, 2008**
- **The Times & Democrat – October 11, 2010**
- **Metal Architecture Magazine – February 2011**





ARCHITECT
TEACHER
PRESIDENT



1917



BUILT BY STUDENTS

1926



POINT OF PRIDE

2004



ALMOST LOST

A REHABILITATION STORY



historic landmark

1922



site

main entrance



1924



campus map

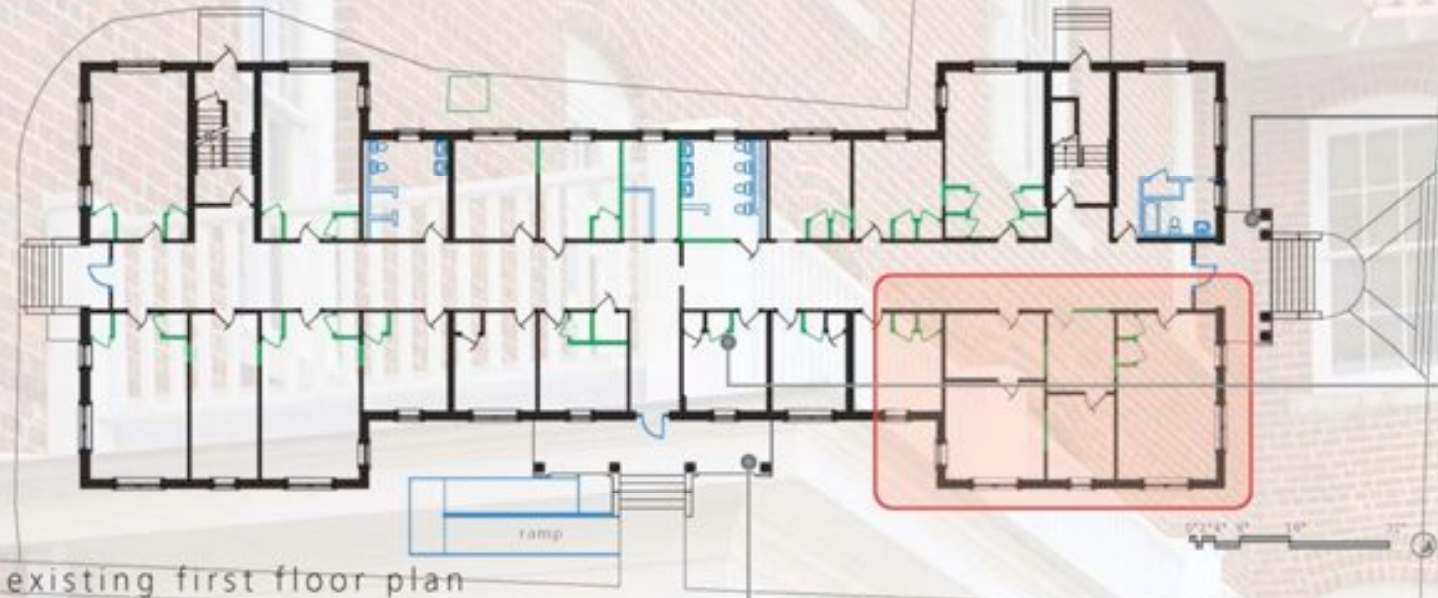


2004 2010



- 1 Roofing returned to original "terra cotta" profile.
- 2 Original windows restored & rebuilt. Interior glazed "storm windows" introduced to improve thermal efficiency.
- 3 Steel dowels embedded in horizontal masonry joints to stabilize severe settlement and buckling due to previous structural damage.
- 4 Non-original window and masonry patch replaced with historically accurate French doors.
- 5 Historically accurate balustrade rebuilt.
- 6 Side entry portico rebuilt based upon photos of front entry and salvaged members at side entry.

■ original construction restored ■ original construction removed ■ later construction removed
 ■ area of severe steam damage



■ new construction



original construction restored
 original construction removed
 later construction removed
 area of severe steam damage
 area of severe damage caused by roof leaks



existing second floor plan

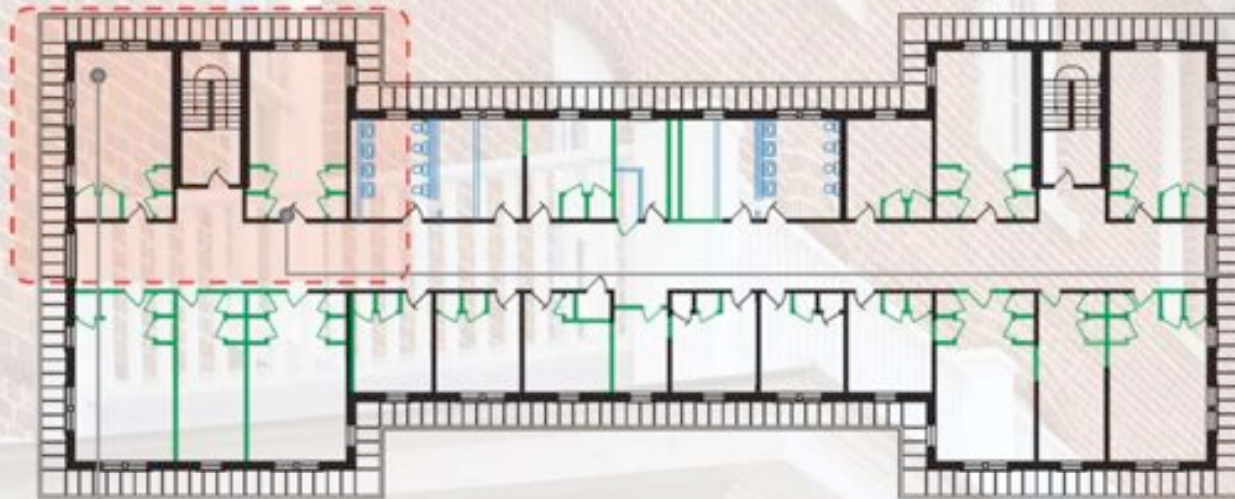
new construction



second floor plan

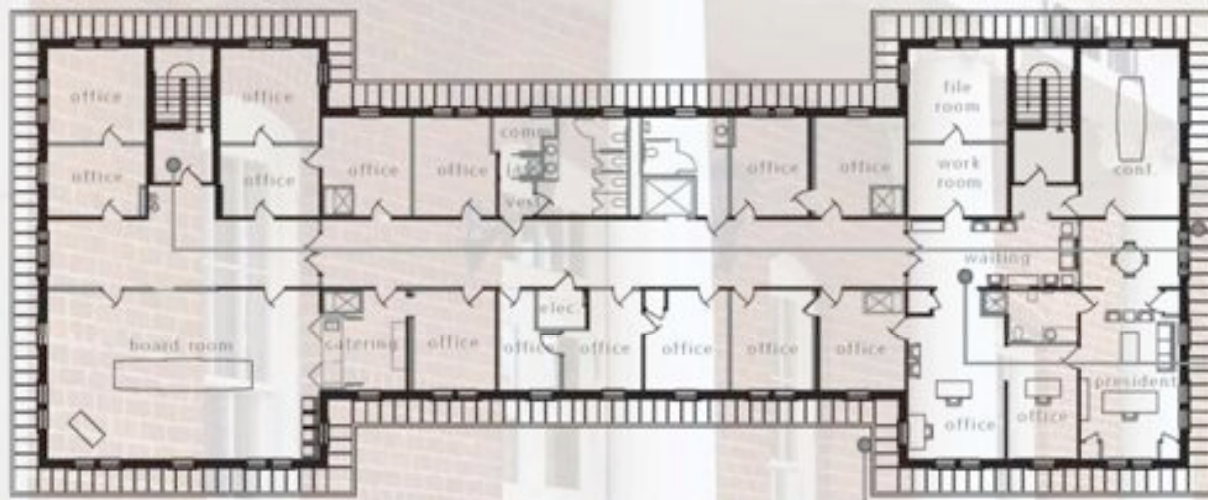


original construction restored
 original construction removed
 later construction removed
 area of severe damage caused by roof leaks



existing third floor plan

new construction

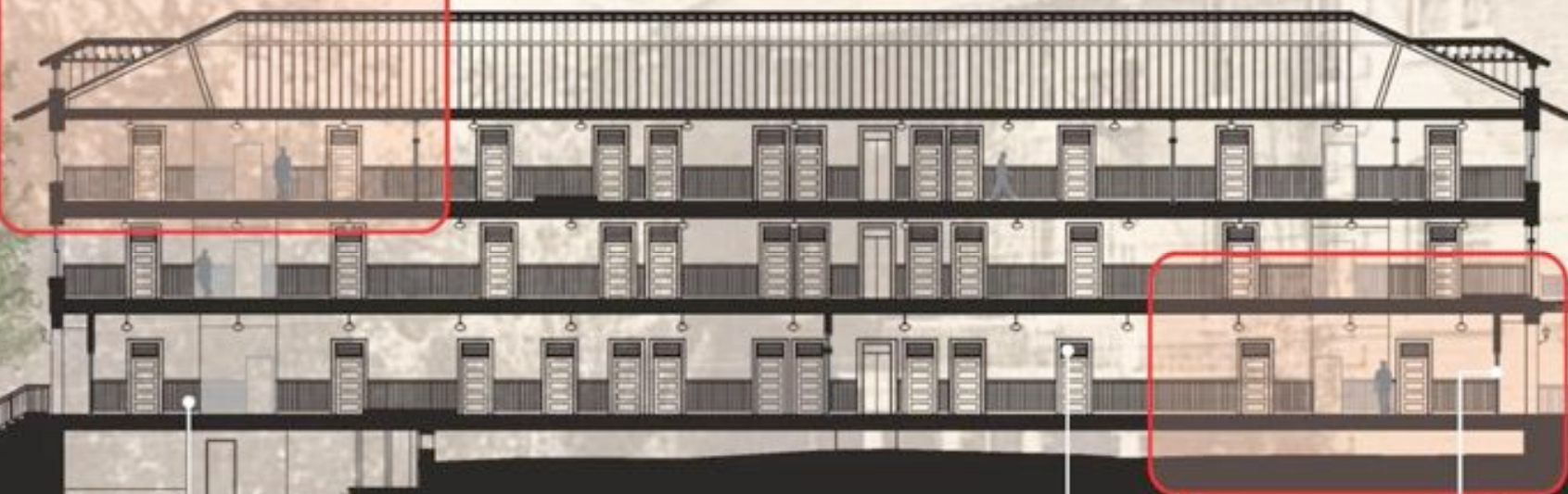


third floor plan





Area of severe damage due to roof leaks



Area of severe damage due to steam pipe leaks



TYPICAL INTERIOR CORRIDOR





EAST ENTRY & CORRIDOR



CAPITOL



BASE

PORCH



Thank You



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Question & Answer



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